

FY04 ANNUAL ACCOMPLISHMENTS/ FY05 WORK PLAN

SFAN Inventory and Monitoring Program

I. Overview and Objectives

The San Francisco Bay Area Network (SFAN) includes eight parks with significant natural resources in the central California region. These parks include Eugene O'Neill National Historic Site (EUON), Fort Point National Historic Site (FOPO), Golden Gate NRA (GOGA), John Muir NHS (JOMU), Muir Woods National Monument (MUWO), Pinnacles National Monument (PINN), the Presidio of San Francisco (PRES) and Point Reyes National Seashore (PORE). FOPO, MUWO, and PRES are within the boundaries of and are administered by GOGA, so are included as part of GOGA for the purposes of this annual report. The SFAN Network has included two parks that were not identified in the national list of 270 parks with significant natural resources for which the servicewide program was designed. PRES has several areas of significant natural resources, such as Crissy Field, so it was included in the SFAN. The SFAN also included EUON because it is jointly managed with JOMU and is surrounded on three sides by Las Trampas Regional Wilderness Park. Therefore, wildlife may utilize EUON and significant plant communities occur nearby.

Completion of baseline inventories and a long-term monitoring program are very important to the SFAN because the parks fall within one of the six most significant areas in the nation for biodiversity (Nature Conservancy 2000). In addition, on an international level, the SFAN is within the eight most significant "hot spots" in the world for biodiversity at great risk due to rapid human population growth (Cincotta and Engelman 2000).

The purpose of this document is to report on FY04 accomplishments and to identify the proposed FY05 workplan for the SFAN Inventory and Monitoring (I&M) Program. The servicewide I&M program provided funding to the SFAN for the fifth year of inventories (\$93,800) and for the fourth year of the vital signs monitoring program (\$742,800). The Water Resources Division (WRD) I&M program provided the fourth year of water quality funding (\$70,000). In addition, the Vegetation Inventory program provided \$35,000 towards the Pinnacles Vegetation Map. The total amount of funds allocated to the SFAN for FY04 was \$941,600.

In FY05, the SFAN will receive \$70,000 from WRD for the water quality program, and \$742,800 from I&M (representing our full funding level) for a total of \$812,800.

A. Biological Inventories

Objectives for Biological Inventories:

1. Compile and evaluate existing documents, specimens, and spatial information for each park into standard NPS databases, and ensure such information is accurate.
2. Complete the documentation of 90% of vertebrate and vascular plant species in the parks through targeted field investigations and ensure that the species are accurately documented and vouchered.
3. Inventory taxa of special interest identified in the Network's Inventory Study Plan and develop spatial distribution maps and estimates of abundance or condition.
4. Complete baseline vegetation mapping for the Network.

The SFAN implemented inventory projects based on the priorities established in the *Study Plan to Inventory Biotic Resources of the San Francisco Bay Area National Parks* (Inventory Study Plan; Press and Irving-Seminoff 2000). Many of the surveys were for multiple years to capture seasonality. Since 2000, a total of 25 inventory projects approved for funding in the Inventory Study Plan were initiated (summarized in Appendix 3).

In FY04, SFAN personnel and park staff concentrated on completing existing studies, thus initiated only one new inventory project - the creation of a vegetation map of Mt. Wanda in JOMU. Twenty inventory projects were continued from FY03. Eight of those projects were supported through the inventory account and two from monitoring funds. The remaining ten inventories were funded in previous years.

Two of the eight inventory projects initiated surveys of marine systems through the coastal biological resources survey and the sub-tidal/deep water survey. Rare plant surveys were supported for the fourth year at GOGA and PORE, completing these projects. Data evaluation, report writing, and specimen preparation were completed for the lichen inventory at PINN. The vertebrate surveys for small mammals and herpetofauna were started after the USGS-BRD assisted with survey design. A geomorphological study of Strentzel canyon, JOMU, was the top park priority. The baseline data collection was supported by the SFAN I&M program. Data mining continued and efforts were placed on verification and certification of the taxonomic databases in NPSpecies.

A biological technician from the data mining team continued to enter legacy data, conduct QA/QC, and locate additional documentation and voucher specimens. Specialists from NPS, other agencies or organizations, and universities assisted with certification.

As authorized under the initial WASO guidance, some monitoring funds were used to implement needed, high priority, but unfunded projects identified in the Inventory Study Plan. The FY04 vital signs monitoring funds supported two vegetation mapping projects, one at PINN and one at JOMU. The mapping projects are needed for vital signs protocol development. The lepidoptera survey that was initiated at PINN and JOMU in 2003 was continued in FY04 primarily using Pacific West Regional (PWR) funds.

Bats were identified as an inventory need in the Inventory Study Plan since parks have very little information about them, but the inventory projects were slow to get started. PINN initiated a new contract to inventory bats with the Central Coast Bat Group, because the original contractor defaulted. The GOGA bat inventory was contracted to the USGS-BRD in FY03. Project compliance was completed and surveys were initiated in FY04.

In FY05, the SFAN will not receive servicewide inventory funds. Therefore, the Network plans to utilize vital signs monitoring funding to complete the vegetation mapping project at PINN. The PINN vegetation map is also being supported with other national funds. The vegetation map is one of the required inventory datasets as well as the foundation for other monitoring programs. Other field surveys will be completed using previously obligated funds. These projects will include surveys for bats at GOGA and PINN, for rare plants at GOGA, for nearshore fish and marine sub-tidal/deep water habitat of GOGA and PORE, and for lepidoptera at PINN and JOMU.

The Network will continue data mining for all parks in FY05, concentrating on data entry and certification of the accuracy of NPSpecies data and incorporating the new surveys. A summary report will be developed which will compile inventory results, outline how funds were spent, describe highlights, and provide recommendations for future studies. It will cover the 5-years of servicewide inventory funding from 2000 through 2004.

B. Vital Signs Monitoring

Objectives for monitoring:

5. Develop and advance the SFAN VSM program in accordance with currently approved scientific methods including identification of monitoring questions, ecological indicators, measurable objectives, a sampling framework for integrated monitoring and peer review. Includes developing and revising the SFAN Vital Signs Monitoring Plan.
6. Develop protocols, including the water quality indicators, and implement programs to monitor vital signs.

The SFAN has been working since 2001 towards development of the Network Monitoring Plan, including hiring key personnel and conducting “vital signs” workshops. In FY01, the network hired an I&M Network Coordinator and in FY02, hired a Network Data Manager and Network Biological Technician to coordinate these activities. The data manager and the biological technician were critical in compiling existing information relevant to development of the monitoring plan and in making the information accessible. The biological technician became the Network Natural Resource Specialist as this position was upgraded from a GS-7 to a GS-9 due to an accretion of duties. The Network Natural Resource Specialist, also represents the small parks in the network (EUON and JOMU).

In FY04, the Network concentrated on the development and/or peer-review of protocols for the top group of vital signs indicators. The six protocols that were developed in FY03 were revised and some were submitted for peer-review during 2004. The network implemented monitoring of six indicators (stream fish assemblages, Northern Spotted Owls, Western Snowy Plovers, pinnipeds, landbirds, and raptors), although not all received I&M funds in FY04. A priority list of indicators and the schedule for protocol development is in Appendix 2. Many of these indicators have protocols utilize well-established, regional monitoring programs. In addition, the network used specialty “focus groups” to evaluate protocols and sampling strategies for indicators that were not as far along in development. These groups included landuse/landscape change, vegetation, and water. Focus groups were composed of NPS personnel, other agency or non-government agency specialists, and university scientists.

In FY05, the draft Phase III Monitoring Plan will be completed in December and the final completed by September 30. The Monitoring Plan will include protocols for six of the vital signs indicators, the draft water quality monitoring protocol and a Data Management Plan, as required by the national timeline. Protocol development summaries will be included for all of the top 18 indicators. SFAN also will work with partners to augment funding and leverage assistance for additional vital signs indicators. Additional protocols will be submitted for review through the CESU review process as well as other reviewers already contacted by the network. Efforts for the rest of the year will focus on developing monitoring protocols for additional indicators.

C. Water Quality Monitoring

Objectives for water quality monitoring:

7. Coordinate development and approval of a long-term water quality monitoring program.
8. Establish and maintain long-term meteorologic and hydrologic monitoring sites and facilitate data management for those sites.

A SFAN Preliminary Water Quality Status Report was completed in FY2004. This is a comprehensive report that includes information on surface hydrology, beneficial uses of water bodies, monitoring history, water quality issues, priorities, and recommendations for future monitoring. The report also includes summaries of water quality scoping meetings. A preliminary data analysis by UC Berkeley was incorporated into this report. Development of the water quality protocol for the long-term monitoring plan is on going, but a draft will be submitted with Phase III of the Network Monitoring Plan. Some monitoring occurred in FY2004, which contributed information for the water quality protocol development and had been previously reviewed by the Water Resource Division. Monitoring continued for the Tomales Bay pathogen TMDL program (PORE/GOGA). Pilot water quality monitoring was conducted at five sites within PINN in the winter and spring. Winter, spring, and summer water quality monitoring was conducted throughout GOGA (including the new Southlands and PRES). Sampling was conducted during a storm event at JOMU as well as in the spring and summer. Aquatic macroinvertebrate

sampling was completed at PORE, GOGA, PINN, and JOMU (23 sites total) and was necessary to fulfill an FY2001 I&M contract for the macroinvertebrate identification. A GS-7 (temporary) network hydrologic technician was hired in April 2004 to assist with operation and maintenance of hydrologic and meteorologic stations and protocol development for weather and freshwater dynamics (stream hydrology), two of the top indicators for the network. Frequent station maintenance and troubleshooting resulted in a fully operational Turbidity Threshold Sampling (TTS) unit during winter storm events. A draft work plan for TTS Station operation and data management was completed. This pilot project may play a significant role in future monitoring for a sediment TMDL.

D. Information Sharing and Data Management

Objectives for information sharing and data management:

9. Implement and maintain an integrated GIS and data management program.
10. Develop and implement strategies to share information with Network parks, scientists, and others interested in the Network VSM program.

Databases will be developed and populated as inventories are initiated. Database structures will be developed as protocols for the top ranked indicators are completed. Database design and conversion will also occur for legacy datasets as they are updated. These databases will meet NPS I&M standards and are the foundation of the scientific knowledge about SFAN parks. Water quality monitoring has additional database management needs.

During FY04 the Network Data Manager became the acting Network Coordinator. Data Management positions were filled at both GOGA and PINN. The majority of data management tasks have been accomplished by the three park-based data management positions (GOGA, PORE, PINN). Support for these positions will continue in FY05. By the end of December 2004, the Network will have a Data Management Plan for guidance of future data management in the Network.

E. Coordinate with Other Studies

In order to expand knowledge and resource conservation beyond park boundaries, the SFAN program contacted representatives working on state, regional and national programs in order to benefit from existing programs and to share from the SFAN I&M program. Contacts and collaborators included the Gulf of the Farallones and Cordell Bank National Marine Sanctuaries, National Marine Fisheries Service, California Department of Fish and Game, several Universities, USGS, and the US Environmental Protection Agency.

The Tomales Bay Biodiversity Inventory (TBBI) is an example of a program from which the I&M program and parks will benefit. Tomales Bay is a highly diverse estuarine system within the boundaries of PORE and GOGA. TBBI objectives include inventories of fish, benthic and intertidal organisms, mammals, seabirds, vascular and non-vascular plants, and plankton.

The data from several network monitoring programs are already important components of many regional and national programs, including the northern spotted owl, pinniped, stream fish, landbirds, and water quality monitoring programs. All of the water quality monitoring programs that address the TMDL issues, as well as projects like the Russian River Coho Broodstock Recovery Program are substantial programs to which the SFAN contributes. Resource specialists in SFAN parks are already involved in monitoring for these programs and are providing recommendations for restoration and protection. These programs are described in Section B, Vital Signs Monitoring.